S *-101*. 2 REFERENCE **CONTENTS**

DESCRIPTION

TITLE SHEET

CROSS SECTION

BORE LOGS SOIL TEST RESULTS

LEGEND SITE PLAN

PROFILE

SHEET NO.

6-9

10-33

4360 3

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY **CRAVEN**

PROJECT DESCRIPTION US 70 (Havelock Bypass) from North of Pine Grove to North of Cateret County

SITE DESCRIPTION Site #5 - Bridge on SR 1756 over US 70 (Havelock Bypass) Between SR 1125 and SR 1763

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTA SHEET
N.C.	R-1015	1	33

CAUTION NOTICE

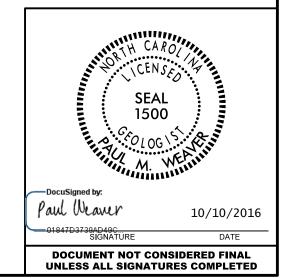
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU UNI-PLACET ISTO DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS MIDICATED IN THE SUBSURFACE INVESTIGATION, THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT, THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTEMPRETATIONS MADE, OR THE DEPARTMENT AS TO THE TOP OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY RESAON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- IES:
 THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT
 OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS
 OR CONTRACT FOR THE PROJECT.
 BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS
 FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE
 CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

	PERSONNEL
_0	C.R. PASTRANA
	A. RADFORD
_	
INVESTIGATED BY	ESP Associates, P.A.
DRAWN BY	WALKER
CHECKED BY P.	WEAVER
	ESP Associates, P.A.
DATE JULY 2	



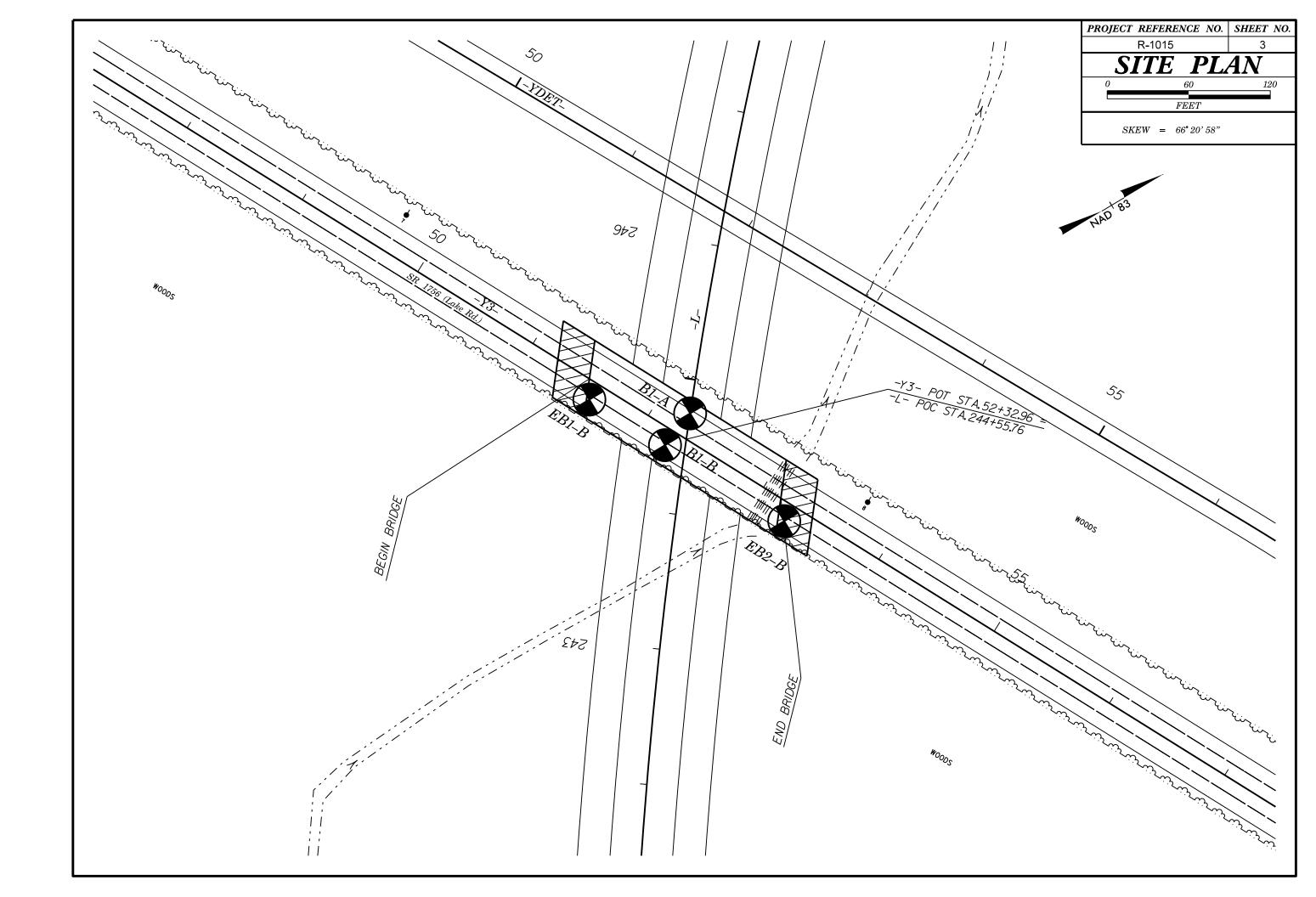
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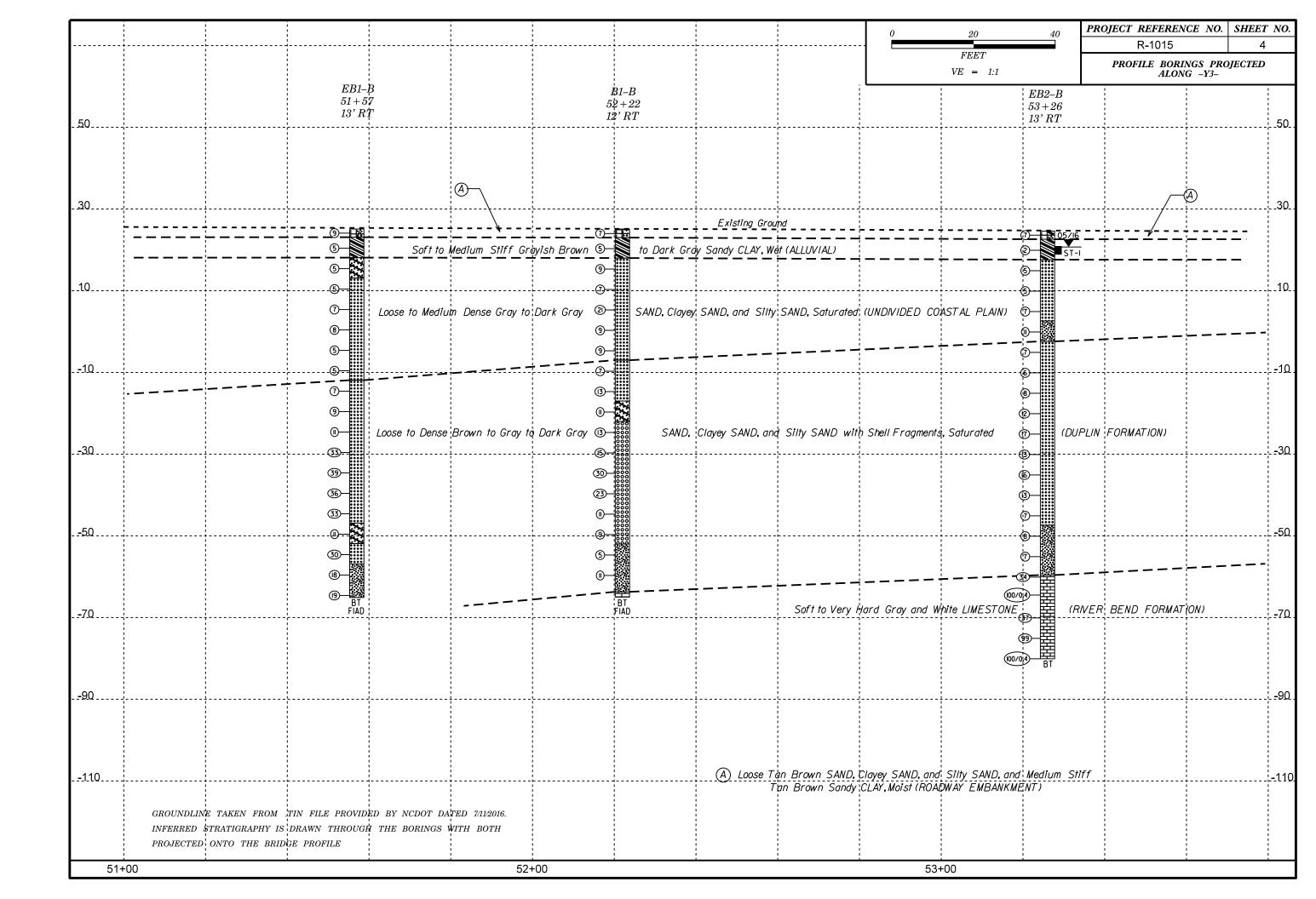
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

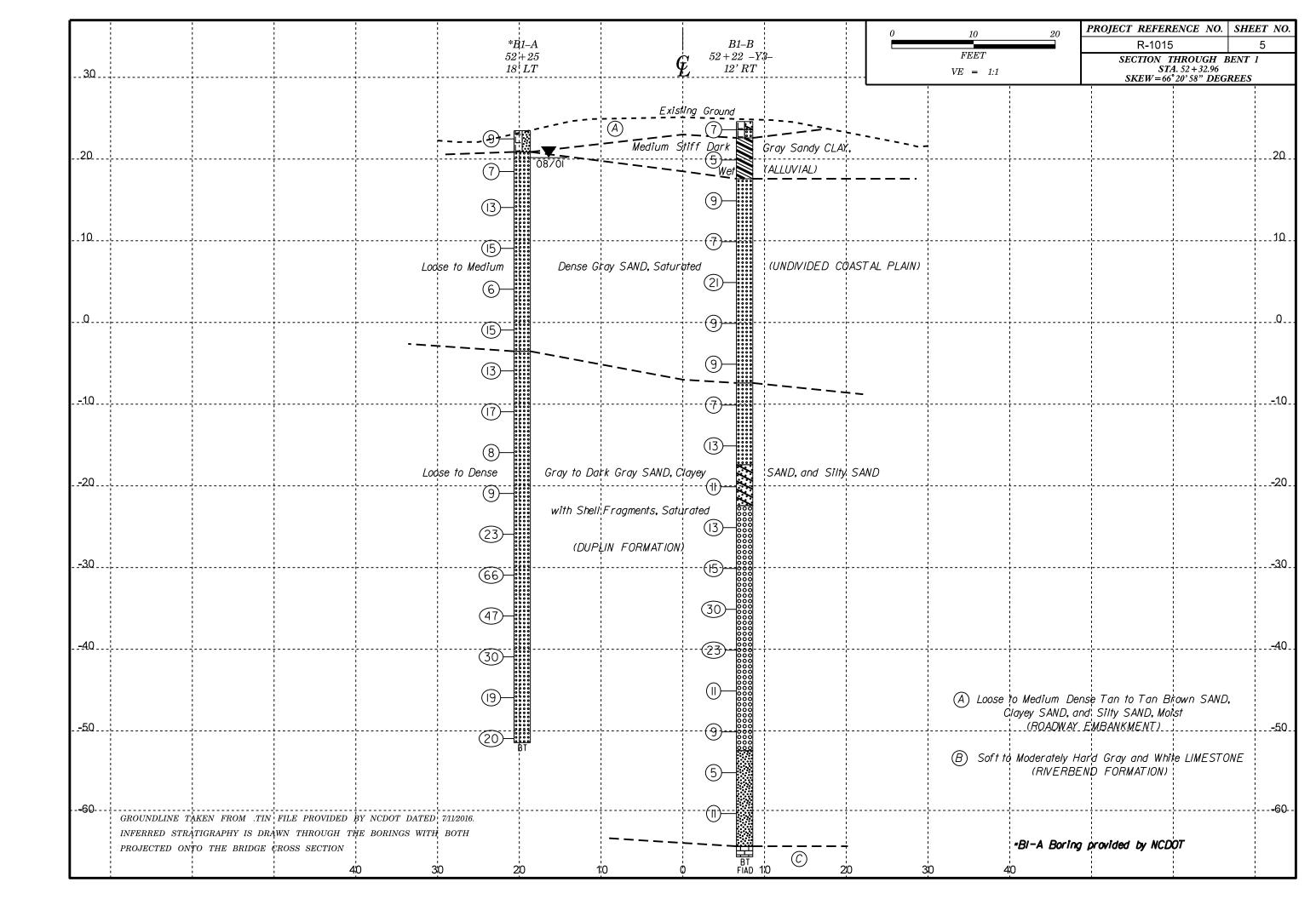
SUBSURFACE INVESTIGATION

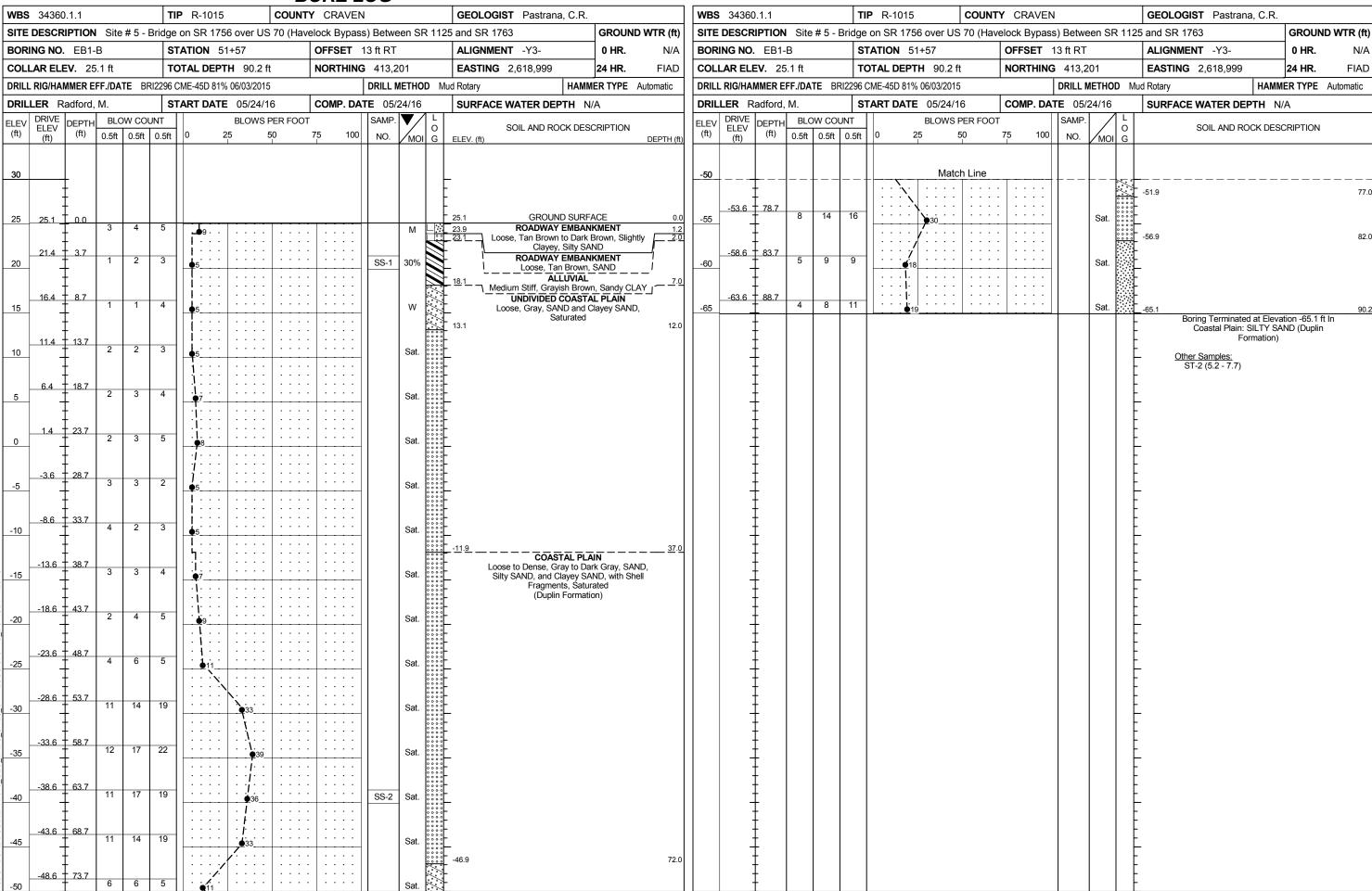
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION	<u>UNIFORMLY GRADED</u> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <u>GAP-GRADED</u> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING
VERY STIFF,GRAY,SULTY CLAY,WOIST WITH INTERBEDDED FINE SAND LAYERS,HIGHLY PLASTIC,A-7-6 SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
CENEDAL CRAMIN AD MATERIAL C CILT.CLAY MATERIAL C	MINERALOGICAL COMPOSITION	FINE TO COARCE CRAIN ICNEOUS AND METAMORPHIC POCK THAT	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
CLASS. (\leq 35% PASSING "200) (> 35% PASSING "200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	WOULD YIELD SPT REFUSAL IF TESTED, ROCK TYPE INCLUDES GRANITE,	SURFACE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	EINE TO COARSE CRAIN METAMORPHIC AND NON-COASTAL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-7-6 A-3 A-6, A-7	COMPRESSIBILITY	NON-CHTSTALLINE SEDIMENTARY ROCK THAT WOULD YELD SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
SYMBOL DOCOGROCOD	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
7. PASSING SILT.	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
"18 58 MX GRANULAR CLAY PEAT SOILS CLAY PEAT	PERCENTAGE OF MATERIAL	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
288 15 MX 25 MX 18 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN 36 MN	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER	ROCKS OR CUTS MASSIVE ROCK.
MATERIAL	TRACE OF ORGANIC MATTER 2 - 3%, 3 - 5%, TRACE 1 - 10%, LITTLE ORGANIC MATTER 3 - 5%, 5 - 12%, LITTLE 10 - 20%	HAMMER IF CRYSTALLINE.	<u>DIP</u> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
PASSING *40 48 MX 41 MN 48 MX 41 MN 48 MX 41 MN 48 MX 41 MN SOILS WITH	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
PI 6 MX NP 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN LITILL UK HIGHLY	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 8 8 8 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
USUAL TYPES STONE FRAGS. FINE CILTY OF CLAYEY CLAYEY MATTER		(SLI.) I INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
OF MAJOR GRAYEL, AND SAND GRAVEL AND SAND SOILS SOILS	STATIC WATER LEVEL AFTER 24 HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
GEN BATING.	<u>▽Pw</u> PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS	PARENT MATERIAL.
AS SUBGRAUE POOR	SPRING OR SEEP	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 +PI OF A-7-6 SUBGROUP IS > LL - 30		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES 'CLUNK' SOUND WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/825 DIP & DIP DIRECTION	IF TESTED, WOULD YIELD SPT REFUSAL	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(IONS/FI-)	WITH SOIL DESCRIPTION → OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL, IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GENERALLY VERY LOOSE < 4 COANNEAD LOOSE 4 TO 10	SOIL SYMBOL SOIL SYMBOL STORT TEST BORING SLOPE INDICATOR INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
MATERIAI MEDIUM DENSE 10 TO 30 N/A	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER THAN ROADWAY EMBANKMENT TEST	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) DENSE 30 TO 50 VERY DENSE > 50	THAN ROADWAY EMBANKMENT TEST	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	── INFERRED SOIL BOUNDARY ── CORE BORING ● SOUNDING ROD	(V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	INFERRED ROCK LINE MN MONITORING WELL TEST BORING	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u> COMPLETE ROCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
MATERIAL STIFF 8 TO 15 1 TO 2	A DIEZOMETED	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4	***** ALLUVIAL SOIL BOUNDARY \(\triangle \tri	ALSO AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION -	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	IZZI UNSULIABLE WASIE IZZI ACCEPTABLE, BUT NUT TU BE	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNDERCUT UNDERC	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
(BLDR.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.)	ABBREVIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM YST - VANE SHEAR TEST	BY MODERATE BLOWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC $ ilde{\gamma}_{ m d}$ - DRY UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE GUIDE FOR FIELD MOISTURE DESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY (SAT.) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON F - FINE SL SILT, SILTY ST - SHELBY TUBE	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE, CAN BE SCRATCHED READILY BY FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
PLASTIC SEMISOLID: REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	
(PI) PL PLASTIC LIMIT	HI HICHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	BENCH MARK: BM-12: RR SPIKE IN TREE STA. 228+71.00 -L- 243' LEFT
- MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: 28.81 FEET
OM _ OPTIMUM MOISTURE SL _ SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES:
DECUMPES ADDITIONAL WATER TO	CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	F.I.A.D. = FILLED IMMEDIATELY AFTER DRILLING
- DRY - (D) ATTAIN OPTIMUM MOISTURE	CME-55 6° CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	
PLASTICITY	☐ B* HOLLOW AUGERS ☐ -B ☐-H	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	CME-550 HARD FACED FINGER BITS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST TUNGCARBIDE INSERTS HAND TOOLS:	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM	X CASING W/ ADVANCER POST HOLE DIGGER	CRAINC CAN BE CEDARATED FROM CAMPIE WITH CIFEL PROPE.	
HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST TRICONE STEEL TEETH HAND AUGER	MODERATELY INDURATED BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TRICONE 'TUNG, CARB, SQUADING POD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE:	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).	X CME-45D CORE BIT VANE SHEAR TEST	DIFFICULT TO BREAK WITH HAMMER.	
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14
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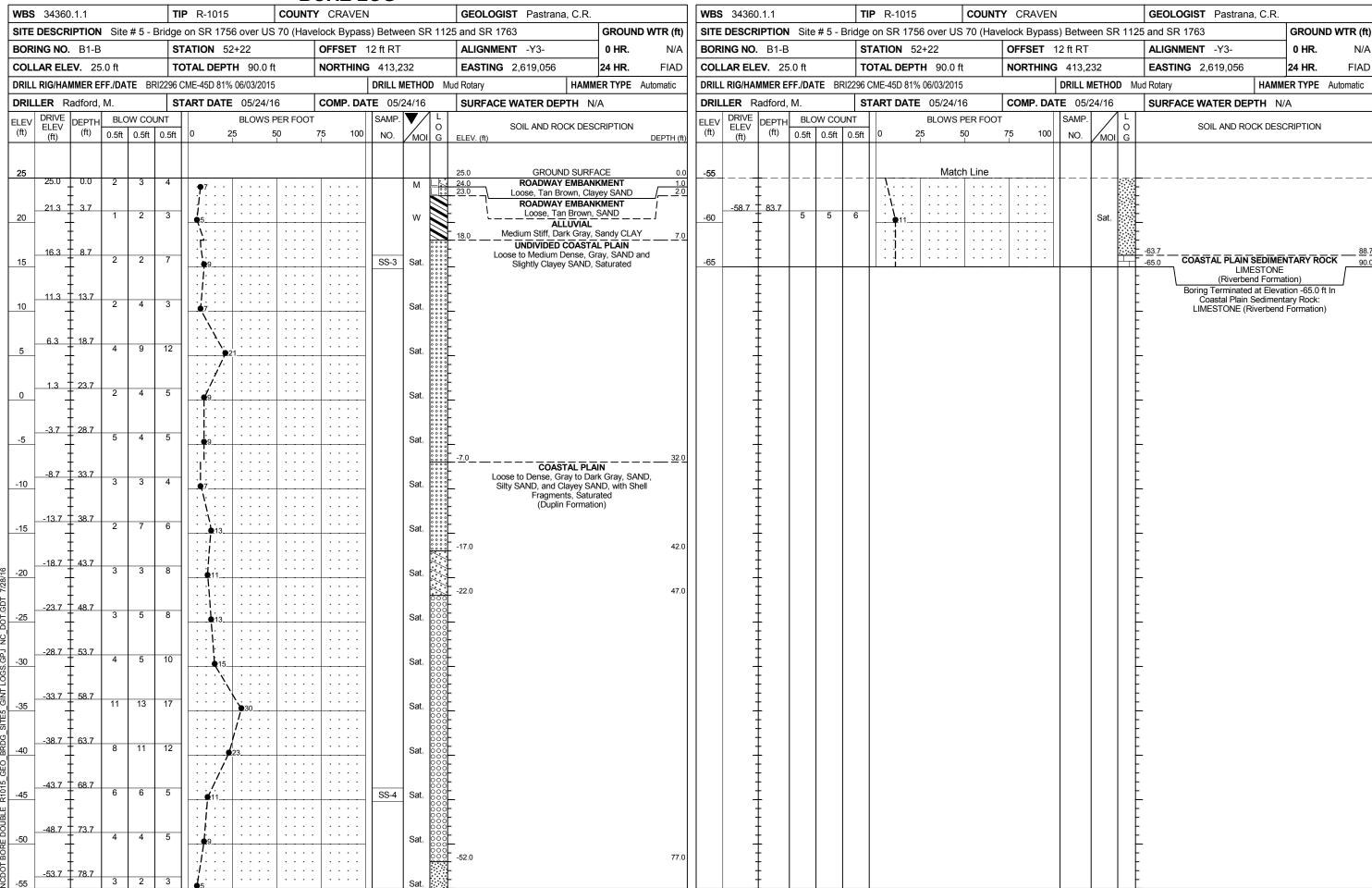


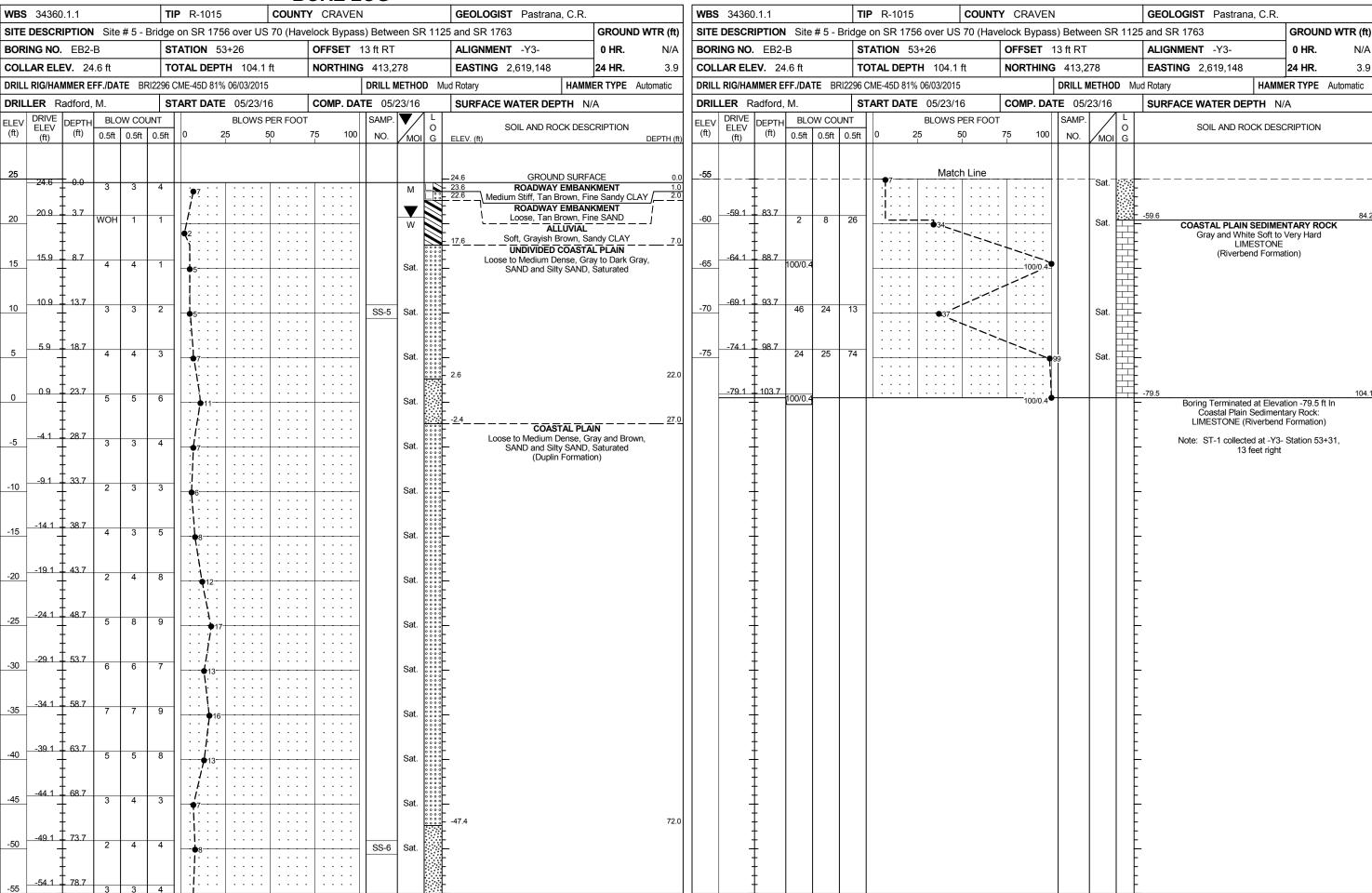




							JKE L	UG				
	34360						CRAVEN				GEOLOGIST F. Westcott-NCI	
SITE	DESCR	RIPTION	Site	# 5 - B	ridge	on SR 1756 over US 70 (Have			een SF	R 112	5 and SR 1763	GROUND WTR (ft)
BORI	NG NO	. B1-A			S	TATION 52+25	OFFSET 1	8 ft LT			ALIGNMENT -Y3-	0 HR . N/A
COLL	AR EL	EV . 23	8.5 ft		TO	OTAL DEPTH 74.9 ft	NORTHING	413,2	260		EASTING 2,619,045	24 HR. 3.3
DRILL	RIG/HA	MMER E	FF./DA	TE CM	E-45B			DRILL N	ИЕТНО	D Mu	id Rotary HAMM	ER TYPE Automatic
DRIL	LER N	ICDOT	Driller		S	TART DATE 08/13/01	COMP. DAT	Γ E 08/	13/01		SURFACE WATER DEPTH N/	A
ELEV	DRIVE	DEPTH		W COU	NT	BLOWS PER FOOT		SAMP.	V /	L	1	
(ft)	ELEV (ft)	(ft)		0.5ft	0.5ft	0 25 50	75 100	NO.	МОІ	O G	SOIL AND ROCK DESC	CRIPTION DEPTH (ft)
	. ,											
٥.												
25	23.5	+ 0.0									- 23.5 GROUND SURFA	ACE 0.0
	20.0	± "-	4	4	5	9				Liit	ROADWAY EMBANI	KMENT
20		Ŧ										<u> </u>
	19.5	† 4.0	3	3	4	7					UNDIVIDED COASTA Loose to Medium Dense, Gr	
		‡				$ \cdot \cdot \uparrow^{\iota}_{i} \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot$					Fine SAND, Satura	
15	15.1	8.4				· j · · · · · · · · · ·					_	
		ŧ	5	5	8	13.						
		Ŧ										
10	10.1	13.4	3	8	7	-					-	
		‡				• 15						
_		‡				:i:: :::: ::::						
5	5.1	18.4	9	4	2	6	 			0000	-	
		Ŧ								:::F		
0	0.1	23.4										
	<u> </u>	23.4	4	8	7	15					-	
		‡									-3.5	27.0
-5	-4.9	28.4				• • • • • • • • • • •					COASTAL PLA	IN
		Ŧ	5	6	7	• 13					 Medium Dense to Loose, Gi Fine SAND with Shell Fragme 	ray, Coarse to ents, Saturated
		‡									(Duplin Formatio	
-10	-9.9	33.4			_						_	
		t	6	9	8	1						
		+				· ·/· · · · · · · · · ·						
-15	-14.9	38.4	3	3	5	1 - 1					_	
		‡	•			: • 8						
		‡										
-20	-19.9	<u> 43.4</u> 	3	5	4		 				-	
		+				. ½						
-25	-24.9	T 48.4								::::F		
		‡	9	10	13	23					-	
		‡				:::: ````\``\						
-30	-29.9	53.4									_	
		t	13	27	39	66						
		+								 		
-35	-34.9	58.4	14	20	27						-	
	•	‡	''	-								
.		‡				:::: ::/: ::::						
-40	-39.9	63.4	12	14	16	<u> </u>	 				-	
		+				/						
-45	-44.9	† 1 68.4				::::/ :::: ::::						
	- .5_	T 00.4	8	11	8	1 • 19					-	
		‡										
-50	-49.9	73.4				<u> </u>					_	
		<u> </u>	4	9	11	•20		1		0000	-51.4	74.9
		‡									Boring Terminated at Eleval Coastal Plain: SAND (Dupl	tion -51.4 ft In in Formation)
		+		1						-	Codotair Idiii. Orivo (Dupi	







SOILS LABORATORY TESTS RESULTS

WBS NO.:

34360.1.1

TIP NO.:

R-1015

COUNTY:

Craven

SITE DESCRIPTION: Site #5 - Bridge on SR 1756 over US 70 (Havelock Bypass) Between SR 1125 and SR 1763

SAMPLE	Boring	DEPTH	AASHTO	N	L.L	P.I.		% BY W	/EIGHT		% P	ASSING SII	EVES	%
NO.		INTERVAL	CLASS				CSE. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTURE
SS-1	EB1-B	3.7-5.2	A-6 (6)	5	36	20	9	43	15	33	100	98	49	30.1
SS-2	EB1-B	63.7-65.2	A-3 (0)	36	19	NP	76	19	4	1	98	· 55	6	
SS-3	B1-B	8.7-10.2	A-3 (0)	9	13	NP	1	90	4	5	100	100	10	
SS-4	B1-B	68.7-70.2	A-1-b (0)	11	11	1	86	11	2	1	95	37	4	
SS-5	EB2-B	13.7-15.2	A-3 (0)	5	19	NP	9	83	4	4	100	99	8	
SS-6	EB2-B	73.7-75.2	A-2-4 (0)	8	22	1	1	76	19	4	100	99	27	
ST-1	EB2-B	3.7-5.7	A-6 (6)	2	32	16	9	38	13	40	100	98	55	30.9

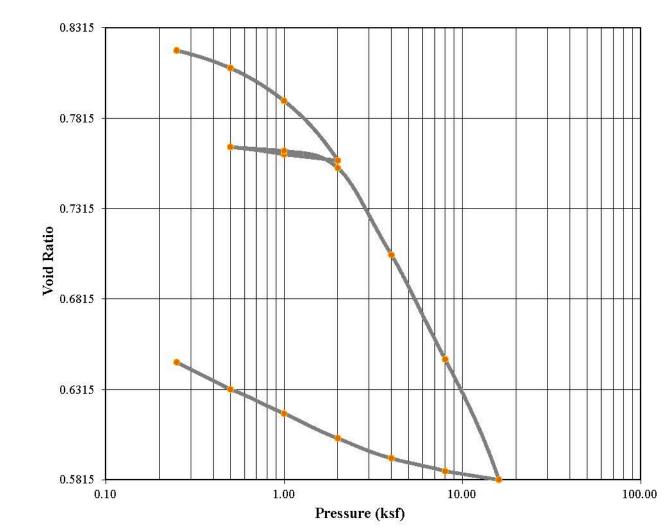
Tony Summers

Certification No. 121-01-1108

Consolidation Test

Test Results





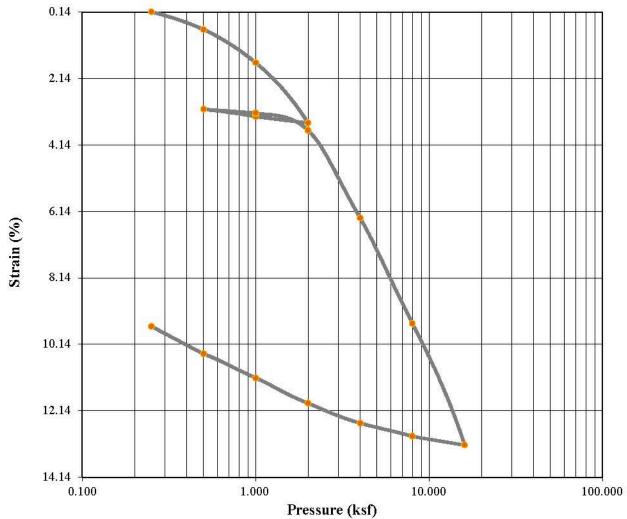
	Before	After	Liquid Limits:	32	Test Date:	6/24/2016
Moisture (%):	30.90	23.53	Plastic Limits:	16		
Dry Density (pcf):	90.67	102.79	Plasticity Index (%):	16		
Saturation (%):	99.31	102.31				
Void Ratio:	0.8225	0.6475	Specific Gravity:	2.650	Assumed	
Soil Description:	**		•			
Project Number:	CS34.325	Depth: 3.7'-5.7'		Rem arks:		
Sample Number:	ST-1	Boring Number: EB2-B				

Project Number: Sample Number: ST-1 R-1015 (site #5) Project:

Client:

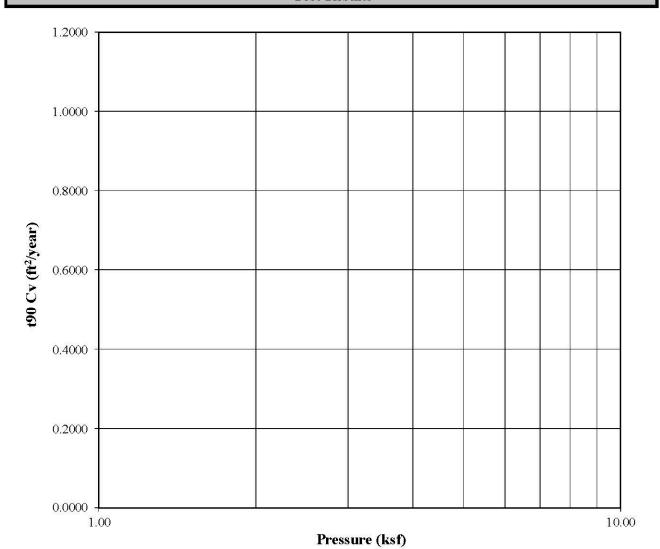
Location: EB2-B ST-1(3.7'-5.7') **Consolidation Test** Test Results





		Before	After	Liquid Limits:	32	Test Date:	6/24/2016
Moisture (%	i):	30.90	23.53	Plastic Limits:	16		
Dry Density	(pcf):	90.67	102.79	Plasticity Index (%):	16		
Saturation (- 77 TO 10 7	99.31	102.31	Straight Colon Christian Switch Colon Colonian colonia in inclusion colonia in colonia in colonia in colonia i			
Void Ratio:		0.8225	0.6475	Specific Gravity:	2.650	Assumed	
Sample Desc	cription:	**		•			
Project Num	ıber:	CS34.325		Depth: 3.7'-5.7'	Remarks:		
Sample Num	ıber:	ST-1	Borir	ng Number: EB2-B			
Project:	R-1015 ((site #5)			7		
Client:							
Location:	EB2-B S	ST-1(3.7'-5.7')					

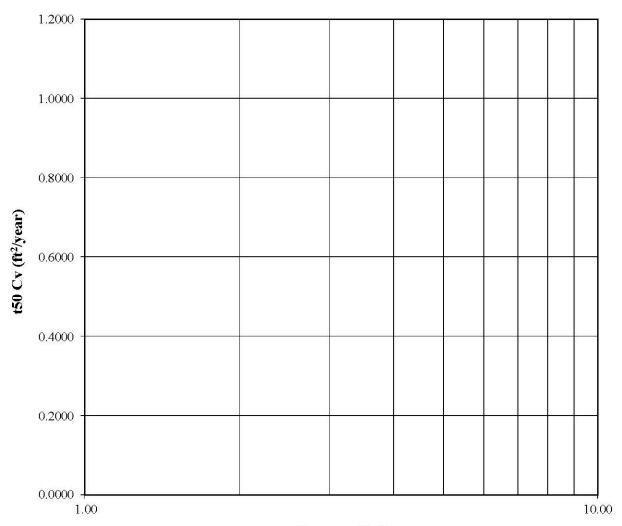
Consolidation Test Test Results



--- t90 Cv

		Before	After	Liquid Limits:	32	Test Date:	6/24/2016
Moisture (%):	30.90	23.53	Plastic Limits:	16		
Dry Density	(pcf):	90.67	102.79	Plasticity Index (%):	16		
Saturation (%):	99.31	102.31	1			
Void Ratio:	400	0.8225	0.6475	Specific Gravity:	2.650	Assumed	
Soil Descript	ion:						
Project Num	ber:	CS34.325		Depth: 3.7'-5.7'	Remarks:		
Sample Num	ber:	ST-1	Bori	ing Number: EB2-B			
Project:	R-1015 (site #5)					
Client:							
Location:	EB2-B S	Γ-1(3.7'-5.7')					

Consolidation Test Test Results

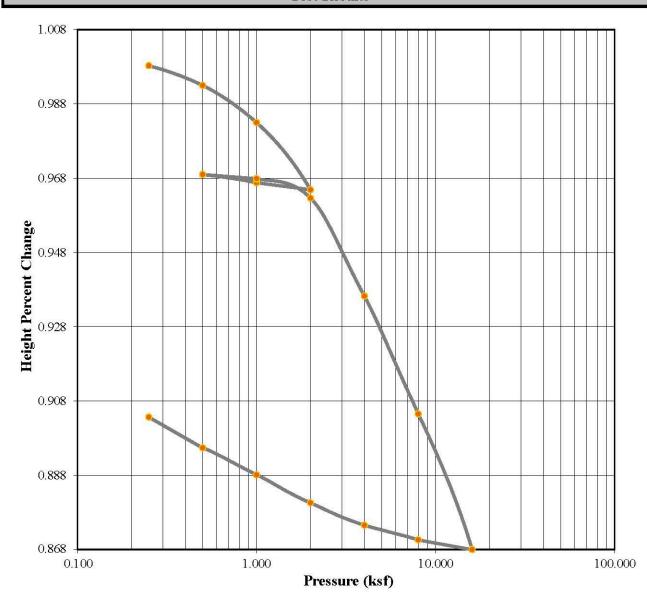


Pressure (ksf)

→ t50 Cv

		Before	After	Liquid Limits:	32	Test Date:	6/24/2016
Moisture (%):	30.90	23.53	Plastic Limits:	16		
Dry Density	(pcf):	90.67	102.79	Plasticity Index (%):	16		
Saturation (%	%) :	99.31	102.31	35			
Void Ratio:	400	0.8225	0.6475	Specific Gravity:	2.650	Assumed	
Soil Descript	ion:						
Project Num	ber:	CS34.325		Depth: 3.7'-5.7'	Remarks:		
Sample Num	ber:	ST-1	Borin	ng Number: EB2-B			
Project:	R-1015 (s	ite #5)			7		
Client:							
Location:	EB2-B ST	·-1(3.7'-5.7')					

Consolidation Test Test Results



		Before	After	Liquid Limits:	32	Test Date:	6/24/2016
Moisture (%):	30.90	23.53	Plastic Limits:	16		
Dry Density	(pcf):	90.67	102.79	Plasticity Index (%):	16		
Saturation (%):	99.31	102.31	3			
Void Ratio:		0.8225	0.6475	Specific Gravity:	2.650	Assumed	
Soil Descript	tion:						
Project Num	ber:	CS34.325		Depth: 3.7'-5.7'	Remarks:		
Sample Num	ıber:	ST-1	Bori	ng Number: EB2-B			
Project:	R-1015	(site #5)			7		
Client:							
Location:	EB2-B	ST-1(3.7'-5.7')					

Page 5 of 45 Page 6 of 45

SHEET 13

Consolidation Test Results Summary

Project Number: CS34.325

Project: R-1015 (site #5)
Location: EB2-B ST-1(3.7'-5.7')

WBS No.: 34360.1.1

Sample Description: Gray to Dark Gray Sandy CLAY (A-6)

Sample Number: ST-1 Boring Number: EB2-B

3.7'-5.7' Test Number: Depth: Remarks: Sample Type: Undisturbed Test Date: 6/24/2016

Index	Load Sequence (ksf)	Cummulativ e Change in Height (in)	Specimen Height (in)	Height of Void (in)	Vertical Strain (%)	Void Ratio	t90 Fitting Time (min)	t50 Fitting Time (min)	t90 Cv (ft2/year)	t50 Cv (ft2/year)
0	0.000	0.0000	1.0000	0.4510	0.00	0.8213	0.000	0.000	0.000	0.000
1	0.250	0.0014	0.9986	0.4496	0.14	0.8188	0.000	0.000	0.000	0.000
2	0.500	0.0067	0.9933	0.4443	0.67	0.8091	0.000	0.000	0.000	0.000
3	1.000	0.0167	0.9833	0.4343	1.67	0.7910	0.000	0.000	0.000	0.000
4	2.000	0.0348	0.9652	0.4162	3.48	0.7580	0.000	0.000	0.000	0.000
5	1.000	0.0329	0.9671	0.4181	3.29	0.7614	0.000	0.000	0.000	0.000
6	0.500	0.0307	0.9693	0.4203	3.07	0.7654	0.000	0.000	0.000	0.000
7	1.000	0.0319	0.9681	0.4190	3.19	0.7632	0.000	0.000	0.000	0.000
8	0.500	0.0307	0.9693	0.4203	3.07	0.7655	0.000	0.000	0.000	0.000
9	1.000	0.0318	0.9682	0.4192	3.18	0.7634	0.000	0.000	0.000	0.000
10	2.000	0.0370	0.9630	0.4139	3.70	0.7539	0.000	0.000	0.000	0.000
11	4.000	0.0634	0.9366	0.3875	6.34	0.7058	0.000	0.000	0.000	0.000
12	8.000	0.0951	0.9049	0.3558	9.51	0.6481	0.000	0.000	0.000	0.000
13	16.000	0.1317	0.8683	0.3193	13.17	0.5815	0.000	0.000	0.000	0.000
14	8.000	0.1291	0.8709	0.3219	12.91	0.5863	0.000	0.000	0.000	0.000
15	4.000	0.1251	0.8749	0.3258	12.51	0.5934	0.000	0.000	0.000	0.000
16	2.000	0.1191	0.8809	0.3319	11.91	0.6045	0.000	0.000	0.000	0.000
17	1.000	0.1115	0.8885	0.3394	11.15	0.6182	0.000	0.000	0.000	0.000
18	0.500	0.1043	0.8957	0.3467	10.43	0.6315	0.000	0.000	0.000	0.000
19	0.250	0.0960	0.9040	0.3550	9.60	0.6465	0.000	0.000	0.000	0.000

Predicted value indicated with *

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Consolidation Specimen Information

 Project:
 R-1015 (site #5)

 Project Number:
 CS34.325

Location: EB2-B ST-1(3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Sample Number: ST-1 Sample Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

Test Number:

Liquid Limit:32.0000Initial Void Ratio:0.8225Initial Height (in):1.0000Plastic Limit:16.0000Plasticity Index (%):16.0000Initial Diameter (in):2.5000

Specific Gravity: 2.6500 Weight of Ring (g): 111.2000

Assumed

Parameters	Initial Specimen	Final Specimen
Moist Weight + Container (g)	150.99	195.90
Dry Soil + Container (g)	127.08	168.12
Weight of Container (g)	49.95	50.04
Moisture Content (%)	30.90	23.53
Void Ratio	0.8225	0.6475
Saturation (%)	99.31	102.31
Dry Density (pcf)	90.67	102. 7 9

Tested By: Tony Summers Checked By: Andrew Burton

Page 7 of 45

SHEET 14

Consolidation Test Results (Sequence 1) Load 0.250 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B
Depth: 3.7'-5.7' Remarks:

Sample Type: Undisturbed

Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3786	0.0000	0.0000	0.8225
1	00:00:01	0.3784	0.0002	0.0168	0.8222
2	00:00:02	0.3784	0.0002	0.0168	0.8222
3	00:00:03	0.3784	0.0002	0.0211	0.8221
4	00:00:04	0.3783	0.0003	0.0253	0.8220
5	00:00:05	0.3783	0.0003	0.0253	0.8220
6	00:00:06	0.3783	0.0003	0.0295	0.8220
7	00:00:12	0.3782	0.0004	0.0379	0.8218
8	00:00:15	0.3782	0.0004	0.0379	0.8218
9	00:00:30	0.3781	0.0004	0.0421	0.8217
10	00:01:00	0.3781	0.0005	0.0505	0.8216
11	00:02:00	0.3780	0.0006	0.0589	0.8214
12	00:04:01	0.3779	0.0007	0.0674	0.8213
13	00:08:01	0.3778	0.0008	0.0758	0.8211
14	00:10:01	0.3778	0.0008	0.0758	0.8211
15	00:15:01	0.3777	0.0008	0.0842	0.8210
16	00:30:02	0.3777	0.0008	0.0842	0.8210
17	01:00:04	0.3776	0.0009	0.0926	0.8208
18	02:00:07	0.3776	0.0010	0.0968	0.8207
19	04:00:14	0.3775	0.0011	0.1053	0.8206
20	08:00:27	0.3774	0.0011	0.1137	0.8204
21	12:00:40	0.3774	0.0012	0.1179	0.8203
22	16:00:53	0.3772	0.0013	0.1347	0.8200
23	20:01:07	0.3771	0.0014	0.1432	0.8199
24	20:05:24	0.3772	0.0014	0.1389	0.8200

Tested By: Tony Summers

Checked By: Andrew Burton

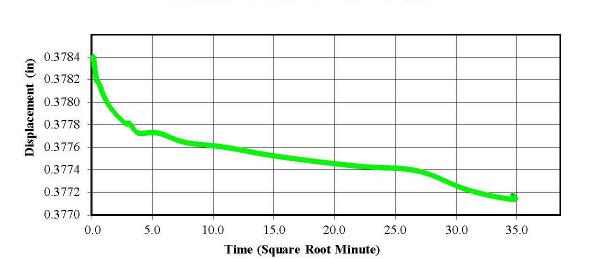
SHEET 15

Consolidation Test Results (Sequence 1) Load 0.250 ksf

Consolidation Graph (Squareroot Time)

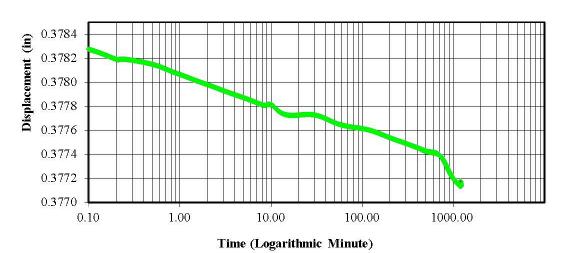
Point1

Load 1 Sqr Line1 Line2



Consolidation Graph (Logarithmic Time)

Load 1 Log



Page 8 of 45

Consolidation Test Results (Sequence 2) Load 0.500 ksf

Project: R-1015 (site #5) **Project Number:** CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

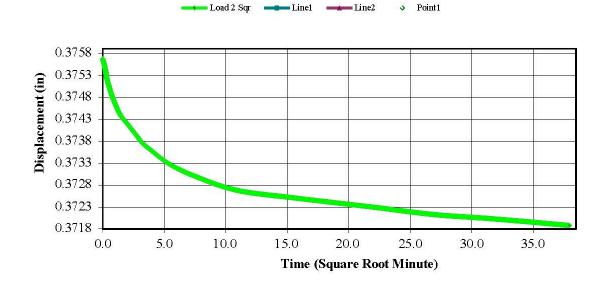
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3772	0.0014	0.1389	0.8200
1.	00:00:00	0.3757	0.0029	0.2905	0.8172
2	00:00:01	0.3755	0.0030	0.3032	0.8170
3	00:00:02	0.3755	0.0031	0.3116	0.8168
4	00:00:03	0.3754	0.0032	0.3158	0.8167
5	00:00:04	0.3754	0.0032	0.3200	0.8167
6	00:00:05	0.3753	0.0033	0.3284	0.8165
7	00:00:11	0.3751	0.0035	0.3453	0.8162
8	00:00:14	0.3751	0.0035	0.3495	0.8161
9	00:00:30	0.3749	0.0037	0.3705	0.8157
10	00:01:00	0.3747	0.0039	0.3916	0.8154
11	00:02:00	0.3744	0.0042	0.4168	0.8149
12	00:04:00	0.3742	0.0044	0.4379	0.8145
13	00:08:00	0.3739	0.0047	0.4674	0.8140
14	00:10:00	0.3738	0.0048	0.4800	0.8137
15	00:15:00	0.3736	0.0050	0.4968	0.8134
16	00:30:01	0.3733	0.0053	0.5305	0.8128
17	01:00:03	0.3730	0.0056	0.5600	0.8123
18	02:00:06	0.3727	0.0059	0.5895	0.8117
19	04:00:13	0.3725	0.0061	0.6063	0.8114
20	08:00:26	0.3723	0.0063	0.6274	0.8111
21	12:00:39	0.3721	0.0064	0.6442	0.8107
22	16:00:53	0.3720	0.0065	0.6526	0.8106
23	20:01:06	0.3720	0.0066	0.6611	0.8104
24	23:59:57	0.3719	0.0067	0.6695	0.8103

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 2) Load 0.500 ksf

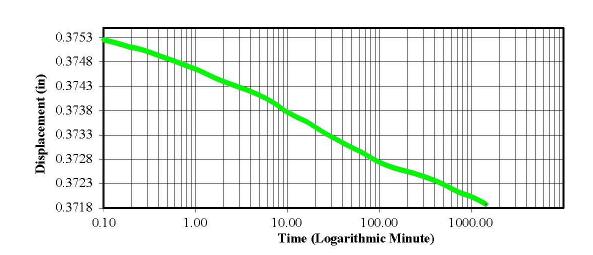
SHEET 16

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 2 Log



Page 10 of 45 Page 11 of 45

Consolidation Test Results (Sequence 3) Load 1.000 ksf

Project: R-1015 (site #5) Project Number: CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

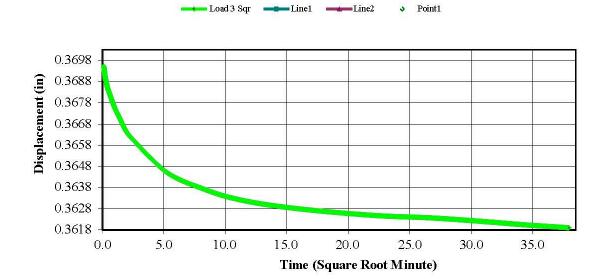
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3719	0.0067	0.6695	0.8103
1	00:00:01	0.3695	0.0091	0.9053	0.8060
2	00:00:02	0.3693	0.0093	0.9305	0.8055
3	00:00:03	0.3691	0.0095	0.9516	0.8051
4	00:00:04	0.3689	0.0096	0.9642	0.8049
5	00:00:05	0.3689	0.0097	0.9684	0.8048
6	00:00:06	0.3688	0.0098	0.9768	0.8047
7	00:00:12	0.3685	0.0101	1.0105	0.8041
8	00:00:15	0.3684	0.0102	1.0189	0.8039
9	00:00:30	0.3680	0.0105	1.0526	0.8033
10	00:01:00	0.3676	0.0110	1.0989	0.8025
11	00:02:00	0.3671	0.0115	1.1495	0.8015
12	00:04:00	0.3664	0.0122	1.2168	0.8003
13	00:08:01	0.3659	0.0127	1.2716	0.7993
14	00:10:01	0.3656	0.0129	1.2926	0.7989
15	00:15:01	0.3652	0.0133	1.3347	0.7982
16	00:30:02	0.3644	0.0141	1.4147	0.7967
17	01:00:04	0.3638	0.0147	1.4737	0.7956
18	02:00:07	0.3632	0.0153	1.5326	0.7946
19	04:00:14	0.3628	0.0157	1.5747	0.7938
20	08:00:27	0.3625	0.0161	1.6084	0.7932
21	12:00:40	0.3624	0.0162	1.6211	0.7929
22	16:00:53	0.3622	0.0164	1.6379	0.7926
23	20:01:07	0.3620	0.0165	1.6547	0.7923
24	23:59:58	0.3619	0.0167	1.6674	0.7921

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 3) Load 1.000 ksf

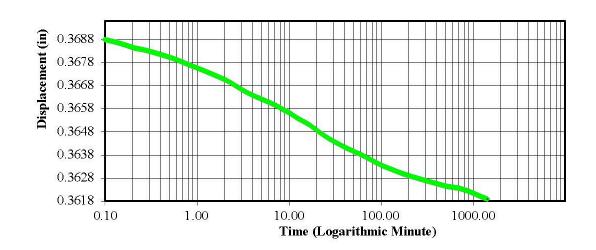
SHEET 17

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 3 Log



Page 12 of 45 Page 13 of 45

Consolidation Test Results (Sequence 4) Load 2.000 ksf

Project: R-1015 (site #5) Project Number: CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

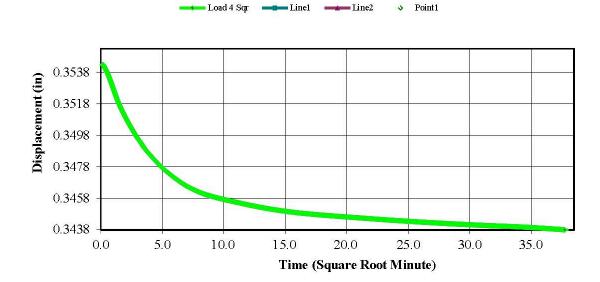
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3619	0.0167	1.6674	0.7921
1.	00:00:01	0.3543	0.0243	2.4295	0.7782
2	00:00:02	0.3543	0.0243	2.4295	0.7782
3	00:00:03	0.3542	0.0243	2.4337	0.7781
4	00:00:04	0.3542	0.0244	2.4379	0.7781
5	00:00:05	0.3541	0.0244	2.4421	0.7780
6	00:00:06	0.3541	0.0245	2.4463	0.7779
7	00:00:12	0.3539	0.0247	2.4674	0.7775
8	00:00:15	0.3538	0.0248	2.4758	0.7774
9	00:00:30	0.3534	0.0251	2.5137	0.7767
10	00:01:00	0.3528	0.0258	2.5768	0.7755
11	00:02:00	0.3519	0.0267	2.6653	0.7739
12	00:04:00	0.3509	0.0276	2.7621	0.7722
13	00:08:00	0.3498	0.0288	2.8758	0.7701
14	00:10:01	0.3494	0.0291	2.9137	0.7694
15	00:15:01	0.3487	0.0299	2.9895	0.7680
16	00:30:02	0.3474	0.0312	3.1158	0.7657
17	01:00:03	0.3463	0.0323	3.2295	0.7636
18	02:00:07	0.3456	0.0330	3.3011	0.7623
19	04:00:13	0.3449	0.0336	3.3642	0.7612
20	08:00:26	0.3445	0.0341	3.4063	0.7604
21	12:00:40	0.3443	0.0343	3.4316	0.7599
22	16:00:53	0.3441	0.0345	3.4484	0.7596
23	20:01:06	0.3440	0.0346	3.4611	0.7594
24	23:59:56	0.3438	0.0348	3.4779	0.7591

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 4) Load 2.000 ksf

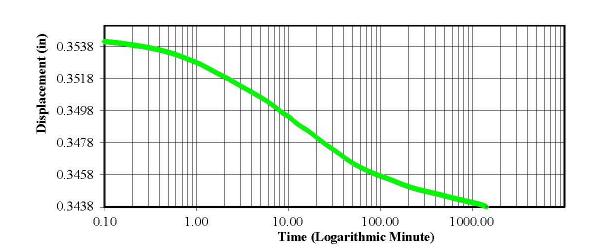
SHEET 18

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 4 Log



Page 14 of 45 Page 15 of 45

Consolidation Test Results (Sequence 5) Rebound 1.000 ksf

Project: R-1015 (site #5) Project Number: CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

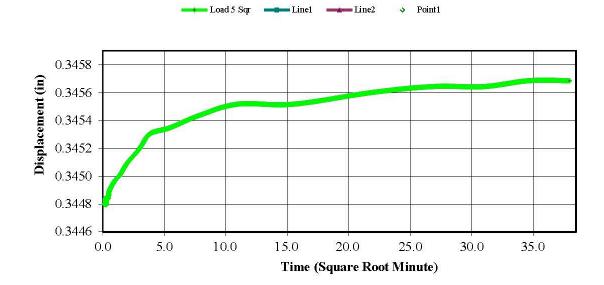
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3438	0.0348	3.4779	0.7591
1.	00:00:01	0.3448	0.0338	3.3768	0.7609
2	00:00:02	0.3448	0.0338	3.3768	0.7609
3	00:00:03	0.3448	0.0337	3.3726	0.7610
4	00:00:04	0.3448	0.0338	3.3768	0.7609
5	00:00:05	0.3448	0.0338	3.3768	0.7609
6	00:00:06	0.3448	0.0337	3.3726	0.7610
7	00:00:12	0.3448	0.0337	3.3726	0.7610
8	00:00:15	0.3449	0.0337	3.3684	0.7611
9	00:00:30	0.3449	0.0336	3.3642	0.7612
10	00:01:00	0.3450	0.0336	3.3600	0.7613
11	00:02:00	0.3450	0.0336	3.3558	0.7613
12	00:04:00	0.3451	0.0335	3.3474	0.7615
13	00:08:01	0.3452	0.0334	3.3389	0.7616
14	00:10:01	0.3452	0.0333	3.3347	0.7617
15	00:15:01	0.3453	0.0333	3.3263	0.7619
16	00:30:02	0.3453	0.0332	3.3221	0.7619
17	01:00:04	0.3454	0.0331	3.3137	0.7621
18	02:00:07	0.3455	0.0331	3.3053	0.7623
19	04:00:14	0.3455	0.0331	3.3053	0.7623
20	08:00:27	0.3456	0.0330	3.2968	0.7624
21	12:00:40	0.3456	0.0329	3.2926	0.7625
22	16:00:53	0.3456	0.0329	3.2926	0.7625
23	20:01:07	0.3457	0.0329	3.2884	0.7626
24	23:59:57	0.3457	0.0329	3.2884	0.7626

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 5) Rebound 1.000 ksf

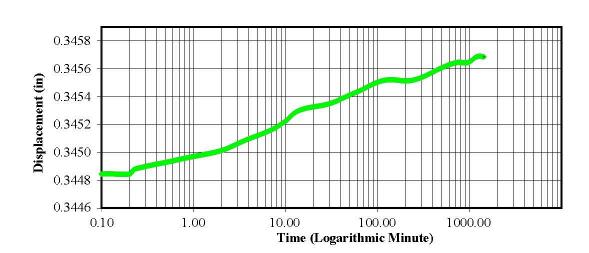
SHEET 19

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

── Load 5 Log



Page 16 of 45 Page 17 of 45

Consolidation Test Results (Sequence 6) Rebound 0.500 ksf

Project: R-1015 (site #5) **Project Number:** CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

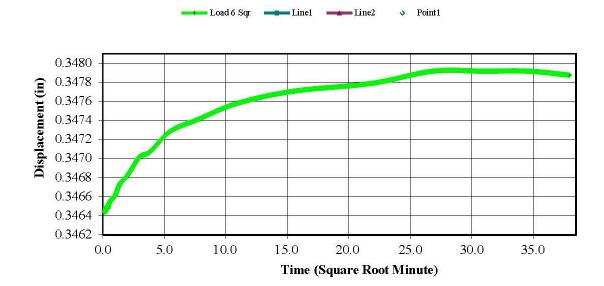
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3457	0.0329	3.2884	0.7626
1	00:00:01	0.3464	0.0321	3.2126	0.7639
2	00:00:02	0.3464	0.0321	3.2126	0.7639
3	00:00:03	0.3464	0.0321	3.2126	0.7639
4	00:00:04	0.3465	0.0321	3.2084	0.7640
5	00:00:05	0.3465	0.0321	3.2084	0.7640
6	00:00:06	0.3465	0.0321	3.2084	0.7640
7	00:00:12	0.3465	0.0321	3.2084	0.7640
8	00:00:15	0.3465	0.0320	3.2042	0.7641
9	00:00:30	0.3466	0.0320	3.2000	0.7642
10	00:01:00	0.3466	0.0320	3.1958	0.7642
11	00:02:00	0.3467	0.0318	3.1832	0.7645
12	00:04:00	0.3468	0.0317	3.1747	0.7646
13	00:08:00	0.3470	0.0316	3.1579	0.7649
14	00:10:01	0.3470	0.0315	3.1537	0.7650
15	00:15:01	0.3471	0.0315	3.1495	0.7651
16	00:30:02	0.3473	0.0313	3.1284	0.7655
17	01:00:03	0.3474	0.0312	3.1158	0.7657
18	02:00:07	0.3476	0.0310	3.0989	0.7660
19	04:00:13	0.3477	0.0309	3.0863	0.7662
20	08:00:26	0.3478	0.0308	3.0779	0.7664
21	12:00:40	0.3479	0.0307	3.0653	0.7666
22	16:00:53	0.3479	0.0307	3.0653	0.7666
23	20:01:06	0.3479	0.0307	3.0653	0.7666
24	23:59:57	0.3479	0.0307	3.0695	0.7665

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 6) Rebound 0.500 ksf

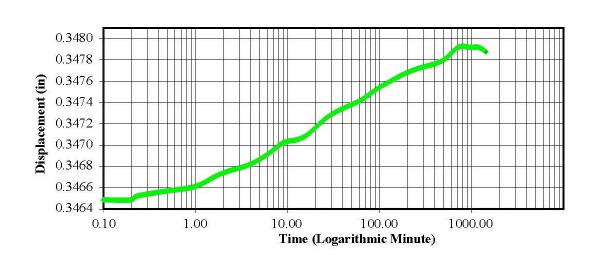
SHEET 20

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 6 Log



Page 18 of 45 Page 19 of 45

Consolidation Test Results (Sequence 7) Load 1.000 ksf

Project: R-1015 (site #5) Project Number: CS34.325

Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

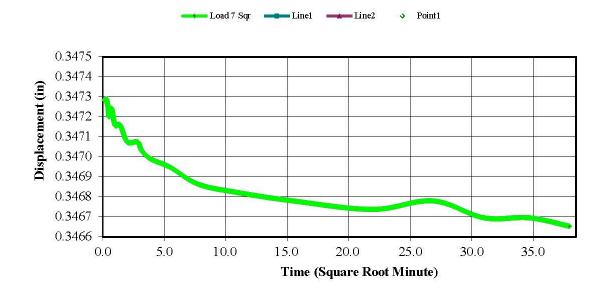
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.3479	0.0307	3.0695	0.7665
1	00:00:01	0.3473	0.0313	3.1284	0.7655
2	00:00:02	0.3473	0.0313	3.1284	0.7655
3	00:00:03	0.3473	0.0313	3.1284	0.7655
4	00:00:04	0.3473	0.0313	3.1284	0.7655
5	00:00:05	0.3473	0.0313	3.1284	0.7655
6	00:00:06	0.3473	0.0313	3.1284	0.7655
7	00:00:12	0.3472	0.0313	3.1326	0.7654
8	00:00:15	0.3472	0.0314	3.1368	0.7653
9	00:00:30	0.3472	0.0313	3.1326	0.7654
10	00:01:00	0.3472	0.0314	3.1411	0.7652
11	00:02:00	0.3472	0.0314	3.1411	0.7652
12	00:04:00	0.3471	0.0315	3.1495	0.7651
13	00:08:00	0.3471	0.0315	3.1495	0.7651
14	00:10:00	0.3470	0.0315	3.1537	0.7650
15	00:15:01	0.3470	0.0316	3.1579	0.7649
16	00:30:02	0.3469	0.0316	3.1621	0.7649
17	01:00:03	0.3469	0.0317	3.1705	0.7647
18	02:00:07	0.3468	0.0317	3.1747	0.7646
19	04:00:13	0.3468	0.0318	3.1789	0.7646
20	08:00:26	0.3467	0.0318	3.1832	0.7645
21	12:00:40	0.3468	0.0318	3.1789	0.7646
22	16:00:53	0.3467	0.0319	3.1874	0.7644
23	20:01:06	0.3467	0.0319	3.1874	0.7644
24	23:59:58	0.3467	0.0319	3.1916	0.7643

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 7) Load 1.000 ksf

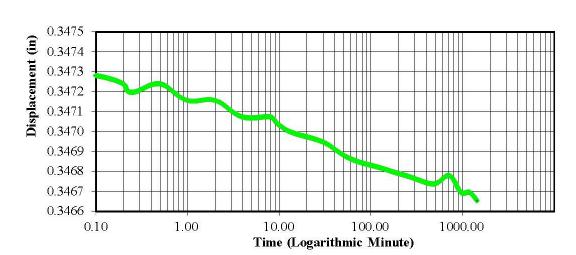
SHEET 21

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 7 Log



Page 20 of 45 Page 21 of 45

Consolidation Test Results (Sequence 8) Rebound 0.500 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

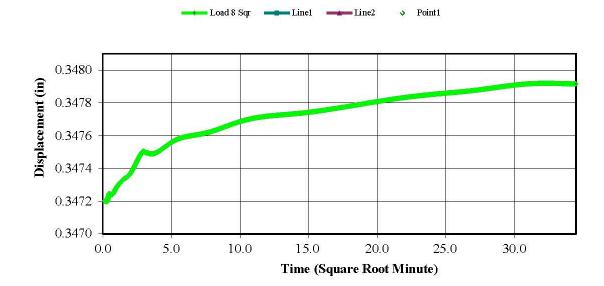
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.3467	0.0319	3.1916	0.7643
1.	00:00:01	0.3472	0.0314	3.1368	0.7653
2	00:00:02	0.3472	0.0314	3.1368	0.7653
3	00:00:03	0.3472	0.0314	3.1368	0.7653
4	00:00:04	0.3472	0.0314	3.1368	0.7653
5	00:00:05	0.3472	0.0314	3.1368	0.7653
6	00:00:06	0.3472	0.0314	3.1368	0.7653
7	00:00:12	0.3472	0.0313	3.1326	0.7654
8	00:00:15	0.3472	0.0313	3.1326	0.7654
9	00:00:30	0.3472	0.0313	3.1326	0.7654
10	00:01:00	0.3473	0.0313	3.1284	0.7655
11	00:02:00	0.3473	0.0312	3.1242	0.7656
12	00:04:00	0.3474	0.0312	3.1200	0.7656
13	00:08:00	0.3475	0.0311	3.1074	0.7659
14	00:10:00	0.3475	0.0311	3.1074	0.7659
15	00:15:01	0.3475	0.0311	3.1074	0.7659
16	00:30:01	0.3476	0.0310	3.0989	0.7660
17	01:00:03	0.3476	0.0309	3.0947	0.7661
18	02:00:06	0.3477	0.0309	3.0863	0.7662
19	04:00:13	0.3477	0.0308	3.0821	0.7663
20	08:00:26	0.3478	0.0307	3.0737	0.7665
21	12:00:40	0.3479	0.0307	3.0695	0.7665
22	16:00:53	0.3479	0.0307	3.0653	0.7666
23	20:01:06	0.3479	0.0307	3.0653	0.7666
24	23:59:57	0.3479	0.0307	3.0653	0.7666

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 8) Rebound 0.500 ksf

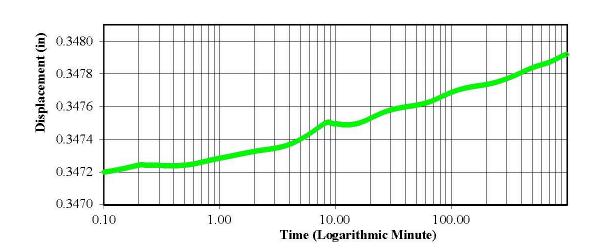
SHEET 22

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 8 Log



Page 22 of 45 Page 23 of 45

Consolidation Test Results (Sequence 9) Load 1.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

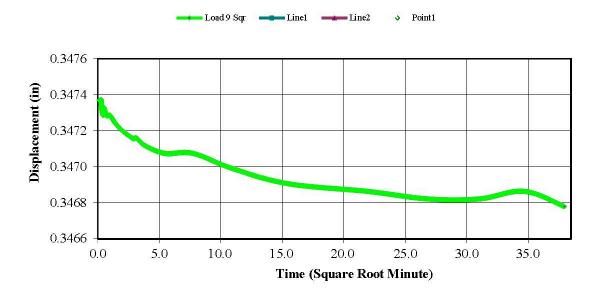
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.3479	0.0307	3.0653	0.7666
1	00:00:01	0.3474	0.0312	3.1200	0.7656
2	00:00:02	0.3474	0.0312	3.1200	0.7656
3	00:00:03	0.3474	0.0312	3.1200	0.7656
4	00:00:04	0.3474	0.0312	3.1200	0.7656
5	00:00:05	0.3474	0.0312	3.1200	0.7656
6	00:00:06	0.3473	0.0312	3.1242	0.7656
7	00:00:12	0.3473	0.0313	3.1284	0.7655
8	00:00:15	0.3473	0.0312	3.1242	0.7656
9	00:00:30	0.3473	0.0313	3.1284	0.7655
10	00:01:00	0.3473	0.0313	3.1284	0.7655
11	00:02:00	0.3472	0.0313	3.1326	0.7654
12	00:04:01	0.3472	0.0314	3.1368	0.7653
13	00:08:01	0.3472	0.0314	3.1411	0.7652
14	00:10:01	0.3472	0.0314	3.1411	0.7652
15	00:15:01	0.3471	0.0315	3.1453	0.7652
16	00:30:02	0.3471	0.0315	3.1495	0.7651
17	01:00:04	0.3471	0.0315	3.1495	0.7651
18	02:00:07	0.3470	0.0316	3.1579	0.7649
19	04:00:14	0.3469	0.0317	3.1663	0.7648
20	08:00:27	0.3469	0.0317	3.1705	0.7647
21	12:00:40	0.3468	0.0317	3.1747	0.7646
22	16:00:53	0.3468	0.0317	3.1747	0.7646
23	20:01:07	0.3469	0.0317	3.1705	0.7647
24	23:59:58	0.3468	0.0318	3.1789	0.7646

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 9) Load 1.000 ksf

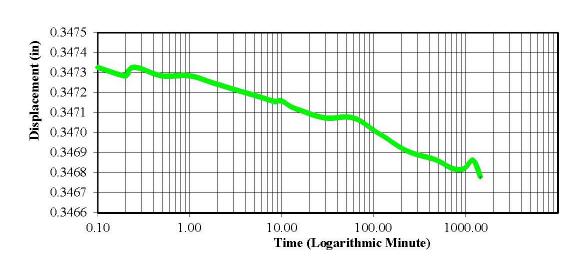
SHEET 23

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 9 Log



Page 24 of 45 Page 25 of 45

Consolidation Test Results (Sequence 10) Load 2.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

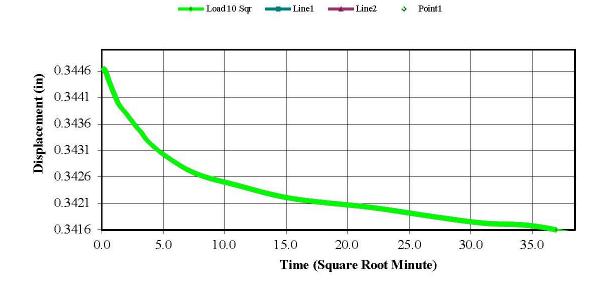
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.3468	0.0318	3.1789	0.7646
1	00:00:01	0.3446	0.0339	3.3937	0.7606
2	00:00:02	0.3446	0.0339	3.3937	0.7606
3	00:00:03	0.3446	0.0339	3.3937	0.7606
4	00:00:04	0.3446	0.0340	3.3979	0.7606
5	00:00:05	0.3446	0.0340	3.3979	0.7606
6	00:00:06	0.3446	0.0340	3.3979	0.7606
7	00:00:12	0.3445	0.0341	3.4063	0.7604
8	00:00:15	0.3445	0.0341	3.4105	0.7603
9	00:00:30	0.3443	0.0342	3.4232	0.7601
10	00:01:00	0.3442	0.0344	3.4400	0.7598
11	00:02:00	0.3440	0.0346	3.4611	0.7594
12	00:04:00	0.3438	0.0348	3.4779	0.7591
13	00:08:01	0.3435	0.0350	3.5032	0.7586
14	00:10:01	0.3435	0.0351	3.5116	0.7585
15	00:15:01	0.3432	0.0353	3.5326	0.7581
16	00:30:02	0.3429	0.0356	3.5621	0.7576
17	01:00:03	0.3427	0.0359	3.5916	0.7570
18	02:00:07	0.3424	0.0361	3.6126	0.7566
19	04:00:13	0.3422	0.0364	3.6379	0.7562
20	08:00:27	0.3420	0.0365	3.6547	0.7559
21	12:00:40	0.3419	0.0367	3.6716	0.7556
22	16:00:53	0.3417	0.0368	3.6842	0.7553
23	20:01:06	0.3417	0.0369	3.6884	0.7553
24	23:59:58	0.3416	0.0370	3.7011	0.7550

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 10) Load 2.000 ksf

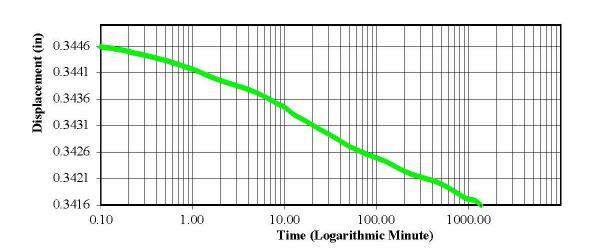
SHEET 24

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 10 Log



Page 26 of 45 Page 27 of 45

Consolidation Test Results (Sequence 11) Load 4.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3416	0.0370	3.7011	0.7550
1	00:00:01	0.3332	0.0454	4.5389	0.7398
2	00:00:03	0.3329	0.0456	4.5642	0.7393
3	00:00:04	0.3328	0.0458	4.5768	0.7391
4	00:00:05	0.3327	0.0459	4.5895	0.7388
5	00:00:06	0.3326	0.0460	4.5979	0.7387
6	00:00:07	0.3325	0.0461	4.6105	0.7385
7	00:00:13	0.3320	0.0466	4.6568	0.7376
8	00:00:16	0.3318	0.0467	4.6737	0.7373
9	00:00:31	0.3312	0.0474	4.7411	0.7361
10	00:01:01	0.3302	0.0483	4.8337	0.7344
11	00:02:01	0.3291	0.0495	4.9516	0.7322
12	00:04:01	0.3275	0.0510	5.1032	0.7295
13	00:08:01	0.3256	0.0530	5.2968	0.7260
14	00:10:01	0.3249	0.0537	5.3684	0.7247
15	00:15:02	0.3235	0.0551	5.5074	0.7221
16	00:30:02	0.3210	0.0576	5.7558	0.7176
17	01:00:04	0.3189	0.0597	5.9663	0.7138
18	02:00:07	0.3176	0.0610	6.0968	0.7114
19	04:00:14	0.3167	0.0619	6.1895	0.7097
20	08:00:27	0.3160	0.0625	6.2526	0.7085
21	12:00:41	0.3157	0.0629	6.2863	0.7079
22	16:00:54	0.3155	0.0631	6.3116	0.7075
23	20:01:07	0.3152	0.0633	6.3326	0.7071
24	23:59:59	0.3152	0.0634	6.3411	0.7069

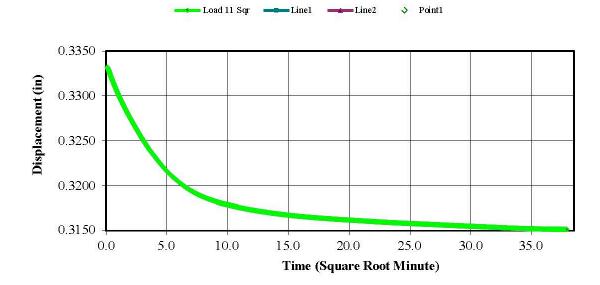
Tested By: Tony Summers

Checked By: Andrew Burton

SHEET 25

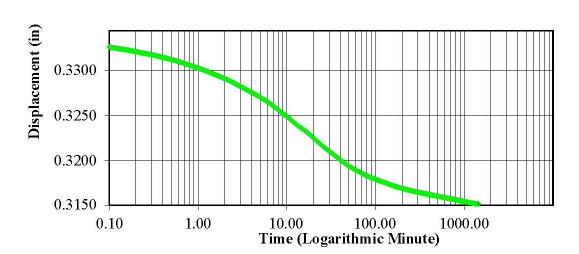
Consolidation Test Results (Sequence 11) Load 4.000 ksf

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 11 Log



Page 28 of 45 Page 29 of 45

Consolidation Test Results (Sequence 12) Load 8.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

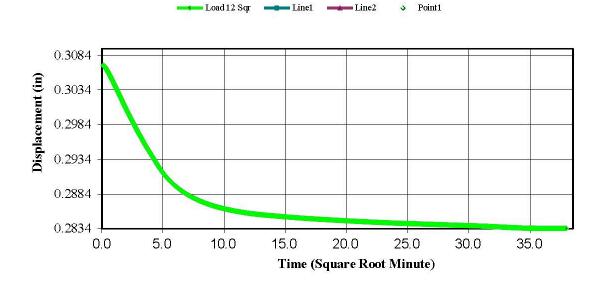
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.3152	0.0634	6.3411	0.7069
1.	00:00:01	0.3069	0.0717	7.1663	0.6919
2	00:00:02	0.3068	0.0717	7.1747	0.6917
3	00:00:03	0.3067	0.0718	7.1832	0.6916
4	00:00:04	0.3067	0.0719	7.1874	0.6915
5	00:00:05	0.3066	0.0720	7.1958	0.6913
6	00:00:06	0.3065	0.0720	7.2042	0.6912
7	00:00:12	0.3061	0.0724	7.2421	0.6905
8	00:00:15	0.3060	0.0726	7.2589	0.6902
9	00:00:30	0.3053	0.0733	7.3263	0.6890
10	00:01:00	0.3043	0.0743	7.4316	0.6870
11	00:02:00	0.3027	0.0758	7.5832	0.6843
12	00:04:00	0.3006	0.0780	7.7979	0.6804
13	00:08:01	0.2977	0.0808	8.0842	0.6752
14	00:10:01	0.2967	0.0819	8.1895	0.6732
15	00:15:01	0.2945	0.0840	8.4042	0.6693
16	00:30:02	0.2904	0.0881	8.8126	0.6619
17	01:00:03	0.2876	0.0909	9.0947	0.6567
18	02:00:07	0.2859	0.0926	9.2632	0.6537
19	04:00:13	0.2851	0.0935	9.3516	0.6521
20	08:00:27	0.2844	0.0942	9.4189	0.6508
21	12:00:40	0.2840	0.0945	9.4526	0.6502
22	16:00:53	0.2838	0.0948	9.4779	0.6498
23	20:01:06	0.2835	0.0951	9.5074	0.6492
24	23:59:57	0.2835	0.0951	9.5116	0.6491

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 12) Load 8.000 ksf

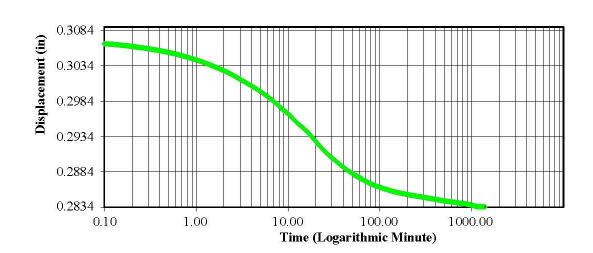
SHEET 26

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 12 Log



Page 30 of 45 Page 31 of 45

Consolidation Test Results (Sequence 13) Load 16.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

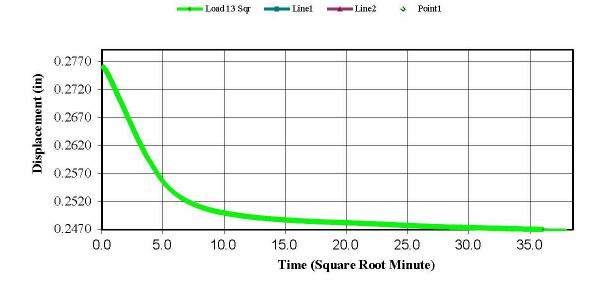
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.2835	0.0951	9.5116	0.6491
1.	00:00:01	0.2761	0.1025	10.2484	0.6357
2	00:00:02	0.2759	0.1027	10.2653	0.6354
3	00:00:03	0.2758	0.1027	10.2737	0.6353
4	00:00:04	0.2757	0.1029	10.2863	0.6350
5	00:00:05	0.2756	0.1029	10.2947	0.6349
6	00:00:06	0.2755	0.1031	10.3074	0.6346
7	00:00:12	0.2750	0.1035	10.3537	0.6338
8	00:00:15	0.2748	0.1038	10.3789	0.6333
9	00:00:30	0.2739	0.1047	10.4674	0.6317
10	00:01:00	0.2725	0.1060	10.6021	0.6293
11	00:02:00	0.2705	0.1080	10.8042	0.6256
12	00:04:01	0.2677	0.1109	11.0905	0.6204
13	00:08:01	0.2637	0.1149	11.4905	0.6131
14	00:10:01	0.2622	0.1163	11.6337	0.6105
15	00:15:01	0.2593	0.1192	11.9242	0.6052
16	00:30:02	0.2544	0.1242	12.4168	0.5962
17	01:00:04	0.2513	0.1273	12.7284	0.5905
18	02:00:07	0.2496	0.1290	12.8968	0.5874
19	04:00:14	0.2486	0.1299	12.9937	0.5857
20	08:00:27	0.2480	0.1305	13.0526	0.5846
21	12:00:40	0.2475	0.1310	13.1032	0.5837
22	16:00:53	0.2473	0.1313	13.1284	0.5832
23	20:01:07	0.2471	0.1315	13.1495	0.5828
24	23:59:58	0.2469	0.1317	13.1663	0.5825

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 13) Load 16.000 ksf

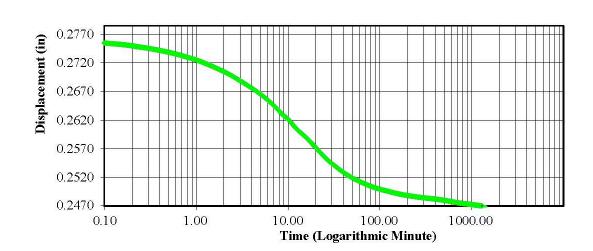
SHEET 27

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 13 Log



Page 32 of 45 Page 33 of 45

Consolidation Test Results (Sequence 14) Rebound 8.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

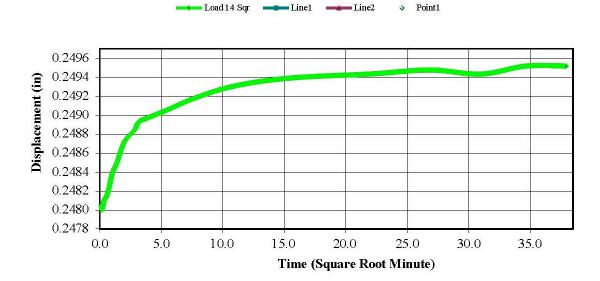
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.2469	0.1317	13.1663	0.5825
1.	00:00:01	0.2480	0.1305	13.0526	0.5846
2	00:00:02	0.2480	0.1306	13.0568	0.5845
3	00:00:03	0.2480	0.1305	13.0526	0.5846
4	00:00:04	0.2480	0.1305	13.0526	0.5846
5	00:00:05	0.2480	0.1305	13.0526	0.5846
6	00:00:06	0.2481	0.1305	13.0484	0.5847
7	00:00:12	0.2481	0.1304	13.0442	0.5848
8	00:00:15	0.2481	0.1304	13.0442	0.5848
9	00:00:31	0.2482	0.1304	13.0358	0.5849
10	00:01:01	0.2484	0.1302	13.0189	0.5852
11	00:02:01	0.2485	0.1301	13.0063	0.5855
12	00:04:01	0.2487	0.1299	12.9853	0.5858
13	00:08:01	0.2488	0.1297	12.9726	0.5861
14	00:10:01	0.2489	0.1296	12.9642	0.5862
15	00:15:01	0.2490	0.1296	12.9600	0.5863
16	00:30:02	0.2491	0.1295	12.9516	0.5864
17	01:00:04	0.2492	0.1294	12.9389	0.5867
18	02:00:07	0.2493	0.1293	12.9263	0.5869
19	04:00:14	0.2494	0.1292	12.9179	0.5871
20	08:00:27	0.2494	0.1291	12.9137	0.5871
21	12:00:40	0.2495	0.1291	12.9095	0.5872
22	16:00:53	0.2494	0.1291	12.9137	0.5871
23	20:01:07	0.2495	0.1291	12.9053	0.5873
24	23:59:58	0.2495	0.1291	12.9053	0.5873

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 14) Rebound 8.000 ksf

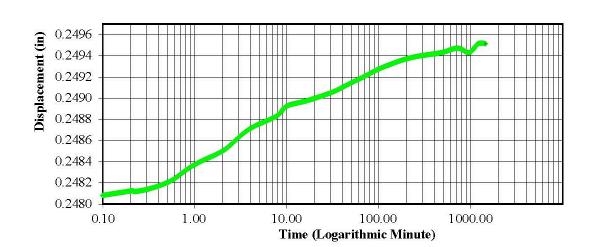
SHEET 28

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 14 Log



Page 34 of 45 Page 35 of 45

Consolidation Test Results (Sequence 15) Rebound 4.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

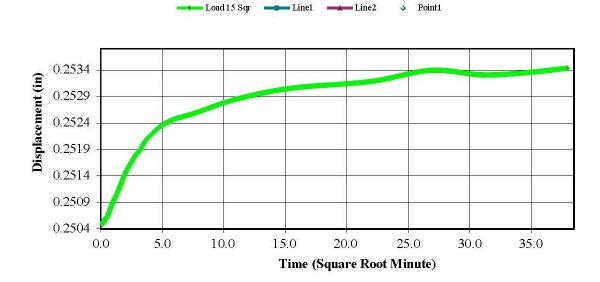
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.2495	0.1291	12.9053	0.5873
1.	00:00:01	0.2505	0.1281	12.8084	0.5891
2	00:00:02	0.2505	0.1280	12.8042	0.5891
3	00:00:03	0.2505	0.1280	12.8042	0.5891
4	00:00:04	0.2505	0.1280	12.8042	0.5891
5	00:00:05	0.2506	0.1280	12.8000	0.5892
6	00:00:06	0.2506	0.1280	12.8000	0.5892
7	00:00:12	0.2506	0.1280	12.7958	0.5893
8	00:00:15	0.2506	0.1280	12.7958	0.5893
9	00:00:30	0.2507	0.1278	12.7832	0.5895
10	00:01:00	0.2509	0.1277	12.7663	0.5898
11	00:02:00	0.2511	0.1275	12.7453	0.5902
12	00:04:01	0.2515	0.1271	12.7116	0.5908
13	00:08:01	0.2518	0.1268	12.6779	0.5914
14	00:10:01	0.2519	0.1267	12.6695	0.5916
15	00:15:01	0.2521	0.1264	12.6442	0.5921
16	00:30:02	0.2524	0.1261	12.6147	0.5926
17	01:00:04	0.2526	0.1260	12.5979	0.5929
18	02:00:07	0.2528	0.1257	12.5726	0.5934
19	04:00:14	0.2531	0.1255	12.5516	0.5937
20	08:00:27	0.2532	0.1254	12.5389	0.5940
21	12:00:40	0.2534	0.1252	12.5179	0.5944
22	16:00:53	0.2533	0.1253	12.5263	0.5942
23	20:01:07	0.2533	0.1252	12.5221	0.5943
24	23:59:57	0.2534	0.1251	12.5137	0.5944

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 15) Rebound 4.000 ksf

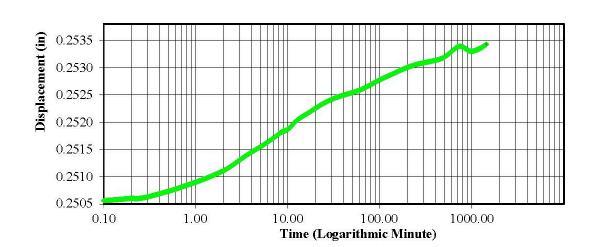
SHEET 29

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 15 Log



Page 36 of 45 Page 37 of 45

Consolidation Test Results (Sequence 16) Rebound 2.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

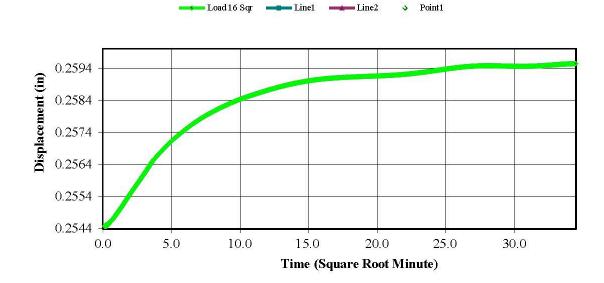
Index	Time	Displacement (in)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.2534	0.1251	12.5137	0.5944
1.	00:00:01	0.2545	0.1241	12.4084	0.5963
2	00:00:02	0.2545	0.1241	12.4084	0.5963
3	00:00:03	0.2545	0.1240	12.4042	0.5964
4	00:00:04	0.2545	0.1241	12.4084	0.5963
5	00:00:05	0.2545	0.1240	12.4042	0.5964
6	00:00:06	0.2545	0.1240	12.4042	0.5964
7	00:00:12	0.2546	0.1240	12.4000	0.5965
8	00:00:15	0.2546	0.1240	12.3958	0.5966
9	00:00:30	0.2547	0.1239	12.3874	0.5967
10	00:01:00	0.2549	0.1237	12.3705	0.5970
11	00:02:00	0.2551	0.1235	12.3453	0.5975
12	00:04:00	0.2555	0.1231	12.3074	0.5982
13	00:08:01	0.2560	0.1226	12.2568	0.5991
14	00:10:01	0.2562	0.1224	12.2358	0.5995
15	00:15:01	0.2566	0.1219	12.1937	0.6003
16	00:30:02	0.2573	0.1213	12.1263	0.6015
17	01:00:03	0.2580	0.1206	12.0589	0.6027
18	02:00:07	0.2586	0.1200	12.0000	0.6038
19	04:00:13	0.2590	0.1195	11.9537	0.6046
20	08:00:27	0.2592	0.1194	11.9368	0.6049
21	12:00:40	0.2595	0.1191	11.9116	0.6054
22	16:00:53	0.2595	0.1191	11.9116	0.6054
23	20:01:06	0.2595	0.1190	11.9032	0.6056
24	23:59:58	0.2595	0.1191	11.9074	0.6055

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 16) Rebound 2.000 ksf

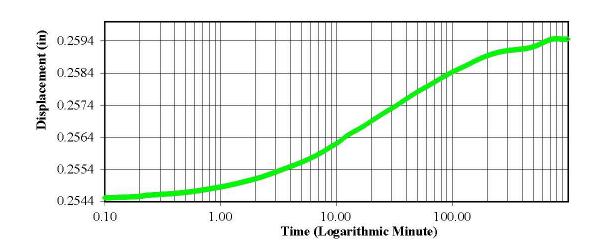
SHEET 30

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 16 Log



Page 38 of 45 Page 39 of 45

Consolidation Test Results (Sequence 17) Rebound 1.000 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

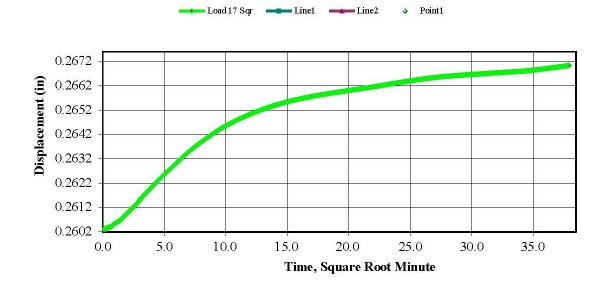
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.2595	0.1191	11.9074	0.6055
1.	00:00:01	0.2603	0.1183	11.8274	0.6069
2	00:00:02	0.2603	0.1182	11.8232	0.6070
3	00:00:03	0.2603	0.1182	11.8232	0.6070
4	00:00:04	0.2603	0.1182	11.8232	0.6070
5	00:00:05	0.2603	0.1182	11.8232	0.6070
6	00:00:06	0.2603	0.1182	11.8232	0.6070
7	00:00:12	0.2604	0.1182	11.8189	0.6071
8	00:00:15	0.2604	0.1182	11.8189	0.6071
9	00:00:30	0.2604	0.1181	11.8147	0.6072
10	00:01:00	0.2605	0.1180	11.8021	0.6074
11	00:02:00	0.2607	0.11 7 9	11.7895	0.6076
12	00:04:01	0.2610	0.11 7 6	11.7600	0.6082
13	00:08:01	0.2614	0.1172	11.7179	0.6089
14	00:10:01	0.2616	0.1170	11.6968	0.6093
15	00:15:01	0.2620	0.1166	11.6589	0.6100
16	00:30:02	0.2628	0.1158	11.5789	0.6115
17	01:00:04	0.2638	0.1148	11.4779	0.6133
18	02:00:07	0.2648	0.1138	11.3768	0.6151
19	04:00:14	0.2656	0.1130	11.2968	0.6166
20	08:00:27	0.2661	0.1124	11.2421	0.6176
21	12:00:40	0.2665	0.1120	11.2042	0.6183
22	16:00:53	0.2667	0.1119	11.1874	0.6186
23	20:01:07	0.2668	0.1117	11.1747	0.6188
24	23:59:58	0.2670	0.1115	11.1537	0.6192

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 17) Rebound 1.000 ksf

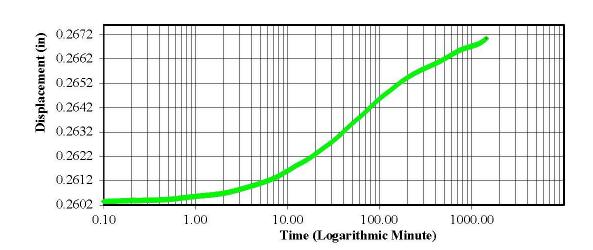
SHEET 31

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 17 Log



Page 40 of 45 Page 41 of 45

Consolidation Test Results (Sequence 18) Rebound 0.500 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

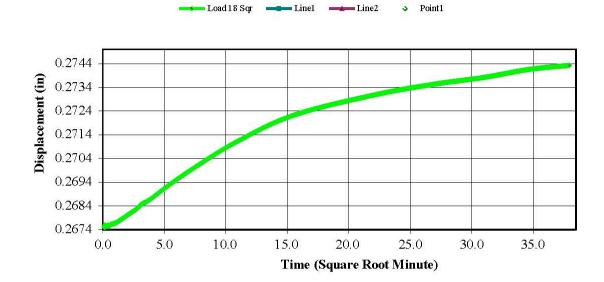
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.2670	0.1115	11.1537	0.6192
1	00:00:01	0.2675	0.1111	11.1074	0.6201
2	00:00:02	0.2676	0.1110	11.0989	0.6202
3	00:00:03	0.2675	0.1110	11.1032	0.6201
4	00:00:04	0.2675	0.1110	11.1032	0.6201
5	00:00:05	0.2675	0.1110	11.1032	0.6201
6	00:00:06	0.2675	0.1110	11.1032	0.6201
7	00:00:12	0.2676	0.1110	11.0989	0.6202
8	00:00:15	0.2675	0.1110	11.1032	0.6201
9	00:00:30	0.2676	0.1109	11.0947	0.6203
10	00:01:00	0.2677	0.1109	11.0905	0.6204
11	00:02:00	0.2678	0.1108	11.0779	0.6206
12	00:04:00	0.2680	0.1106	11.0568	0.6210
13	00:08:00	0.2683	0.1103	11.0274	0.6215
14	00:10:00	0.2685	0.1101	11.0105	0.6218
15	00:15:01	0.2687	0.1099	10.9895	0.6222
16	00:30:01	0.2693	0.1093	10.9263	0.6234
17	01:00:03	0.2701	0.1085	10.8463	0.6248
18	02:00:06	0.2711	0.10 7 5	10.7453	0.6267
19	04:00:13	0.2722	0.1064	10.6358	0.6287
20	08:00:26	0.2731	0.1055	10.5516	0.6302
21	12:00:40	0.2735	0.1051	10.5053	0.6310
22	16:00:53	0.2738	0.1048	10.4758	0.6316
23	20:01:06	0.2741	0.1044	10.4421	0.6322
24	23:59:58	0.2743	0.1043	10.4253	0.6325

Tested By: Tony Summers Checked By: Andrew Burton

SHEET 32

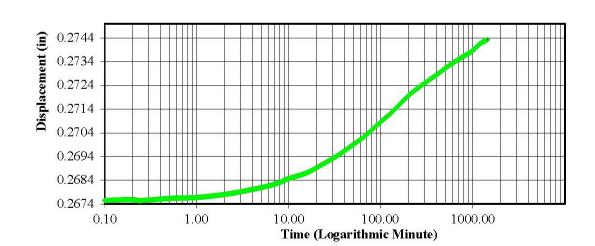
Consolidation Test Results (Sequence 18) Rebound 0.500 ksf

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

—— Load 18 Log



Page 42 of 45 Page 43 of 45

Consolidation Test Results (Sequence 19) Rebound 0.250 ksf

Project: R-1015 (site #5)
 Project Number: CS34.325

 Location: EB2-B-ST-1 (3.7'-5.7')

WBS No.: 34360.1.1 Test Date: 6/24/2016

Test Number:

Sample Number: ST-1 Soil Description: Gray to Dark Gray Sandy CLAY (A-6)

Boring Number: EB2-B

Depth: 3.7'-5.7' **Remarks:**

Sample Type: Undisturbed

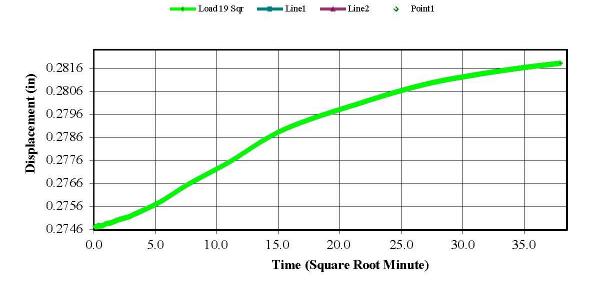
Index	Time	Displacement (in)	Settlement (in)	Axial Strain	Void Ratio
0	00:00:00	0.2743	0.1043	10.4253	0.6325
L 1	00:00:01	0.2747	0.1038	10.3832	0.6333
2	00:00:03	0.2747	0.1038	10.3832	0.6333
L 3	00:00:04	0.2747	0.1038	10.3832	0.6333
4	00:00:05	0.2747	0.1038	10.3832	0.6333
L 5	00:00:06	0.2747	0.1038	10.3832	0.6333
6	00:00:07	0.2748	0.1038	10.3789	0.6333
L 7	00:00:13	0.2748	0.1038	10.3789	0.6333
8	00:00:16	0.2748	0.1038	10.3789	0.6333
L 9	00:00:31	0.2748	0.1038	10.3789	0.6333
10	00:01:01	0.2749	0.1037	10.3705	0.6335
L 11	00:02:01	0.2749	0.1037	10.3663	0.6336
12	00:04:02	0.2750	0.1035	10.3537	0.6338
L 13	00:08:02	0.2752	0.1034	10.3411	0.6340
14	00:10:02	0.2752	0.1033	10.3326	0.6342
L 15	00:15:02	0.2754	0.1032	10.3158	0.6345
16	00:30:03	0.2758	0.1027	10.2737	0.6353
L 17	01:00:05	0.2766	0.1020	10.1979	0.6366
18	02:00:08	0.2775	0.1011	10.1053	0.6383
L 19	04:00:15	0.2789	0.0996	9.9621	0.6409
20	08:00:28	0.2801	0.0984	9.8442	0.6431
L 21	12:00:41	0.2809	0.0977	9.7684	0.6445
22	16:00:54	0.2813	0.0973	9.7263	0.6452
L 23	20:01:08	0.2816	0.09 7 0	9.6968	0.6458
24	23:59:59	0.2818	0.0968	9.6758	0.6461

Tested By: Tony Summers Checked By: Andrew Burton

Consolidation Test Results (Sequence 19) Rebound 0.250 ksf

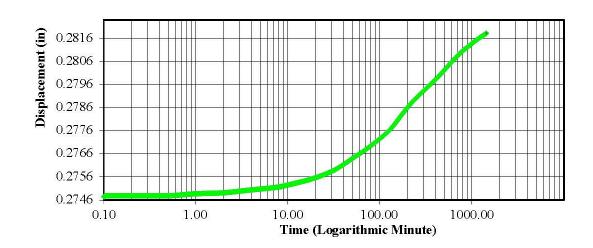
SHEET 33

Consolidation Graph (Squareroot Time)



Consolidation Graph (Logarithmic Time)

Load 19 Log



Page 44 of 45 Page 45 of 45